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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/701,705	12/01/2000	Yukihiko Okumura	15689.61	7195
<div>7590      01/16/2007 ADRIAN J. LEE WORKMAN, NYDEGGER &amp; SEELEY 1000 EAST GATE TOWER 60 EAST SOUTH TEMPLE SALT LAKE CITY, UT 84111</div>			<div>EXAMINER GHULAMALI, QUTBUDDIN</div> <div>ART UNIT      PAPER NUMBER 2611</div>	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/16/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

09/701,705

Applicant(s)

OKUMURA ET AL.

Examiner

Qutub Ghulamali

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4-8,18-20,23,33-37,47,49,51 and 53-85 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7,51,69,78 and 80-84 is/are rejected.
- 7) ☒ Claim(s) 1,2,4,8 and 79 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. The *declaration* filed on 10/13/2006 under 37 CFR 1.131 is sufficient to overcome the Abeta reference.
- 2.

### ***Claim Objections***

3. Claims 1, 4, 8, and 69 objected to because of the following informalities:  
Claim 1, line 9, shouldn't "leading" be replaced by "leaning"?  
Claims 4, and 8, lines 12 and 2, respectively, "to be" needs to be deleted.  
Claim 69, line 6, shouldn't "N sets of the data sequences" be replaced by "N sets of the weight sequences"?  
Appropriate corrections are required.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claim 69 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.  
  
Claim 69 recites the limitation "the pilot signals" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claims 80, 83 recite the limitation "the data channel" in line 3. There is insufficient antecedent basis for this limitation in the claims.

***Claim Rejections - 35 USC § 101***

6. 35 U.S.C. 101 reads as follows:

*Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.*

7. Claims 7, 51 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claim 1, recites "wherein a transmission rate of said data channel differs from a transmission rate of said control channel", has no practical application when taken as a whole with other claim limitations. It fails to lead to a concrete and tangible result when combined with other limitations of the claim. Further, claims 7 and 51 recite limitations which is nothing else than data fetching and calculating a channel estimation value in a channel. A claim must fall into one of the § 101 classes, namely; process, machine, composition of matter and manufactures. A claim for calculating channel estimation is clearly not a process under § 101 because it does not culminate or lead into a concrete and tangible result. The "Interim Guidelines for examination of Patent Applications for Patent subject matter Eligibility" provides that for claims including such excluded matter to be eligible, the claim must be for a practical application and fall within the statutory classes exemplified. The claim fails to show that it meets the statutory classes of § 101. Hence it is concluded that the claims are non-statutory.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 7, is rejected under 35 U.S.C. 103(a) as being unpatentable over Seki et al (USP 6,304,624).

Regarding claim 7, Seki discloses a method of estimating a channel comprising: averaging pilot symbols using weighting factors and calculating a channel estimation value of data symbols of data channel (col. 2, lines 20-43). Seki though discloses generating weighting factors for weighting and averaging pilot symbols being multiplexed in a control channel (I channel and the Q Channel) that was parallel multiplexed together with a data channel (pilot and data are concurrently transmitted) does not explicitly disclose time multiplexing (col. 4, lines 20-27, 58-60). The art of frequency or time multiplexed pilot channel is well known in the art of communication such as DS-CDMA rake receivers and therefore, one skilled in the art at the time of invention was made to utilize time multiplexing in channel estimation because it can minimize propagation effects.

The limitation "wherein a transmission rate of said data channel differs from a transmission rate of said control channel", has no practical application in context of other recited claim limitations and therefore, not treated on merits.

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10. Claims 51, 80-84 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seki et al (USP 6,304,624) in view of Dobrica (USP 6,070,086).

As to claims 51, 80-84, Seki discloses a method of estimating a channel comprising: averaging pilot symbols using weighting factors and calculating a channel estimation value of data symbols of data channel (col. 2, lines 20-43). Seki though discloses generating weighting factors for weighting and averaging pilot symbols being multiplexed in a control channel (I channel and the Q Channel) that was parallel multiplexed together with a data channel (pilot and data are concurrently transmitted) does not explicitly disclose time multiplexing (col. 4, lines 20-27, 58-60). The art of frequency or time multiplexed pilot channel is well known in the art of communication such as DS-CDMA rake receivers and therefore, one skilled in the art at the time of invention was made to utilize time multiplexing in channel estimation because it can minimize propagation effects.

Even though Seki discloses all limitations of the claim above, fail to disclose dividing the data symbols of data channel into a plurality of data symbol sections each of which includes a plurality of data symbols, selecting for each data symbols section pilot symbols appropriate for calculating the channel estimation value. Dobrica, however, discloses dividing the data symbols of data channel into a plurality of data symbol sections each of which includes a plurality of data symbols, selecting for each data symbols section pilot symbols appropriate for calculating the channel estimation value (col. 3, lines 45-67; col. 4, lines 1-17). It would have been obvious to a person of skill in the art at the time of invention to use dividing the data symbols of data channel into a

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plurality of data symbol sections each of which includes a plurality of data symbols, selecting for each data symbols section pilot symbols appropriate for calculating the channel estimation value as taught by Dobrica in the system of Seki because it can provide improved power control error performance and improved Eblo measurements.

***Claim Rejections - 35 USC § 102***

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

12. Claim 78 is rejected under 35 U.S.C. 102(e) as being anticipated by Seki et al (USP 6,304,624).

Regarding claim 78, Seki discloses a demodulation and channel estimation method comprising:

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weighting and averaging pilot signals using a plurality of weight sequences to obtain a plurality of channel estimation values (col. 1, lines 45-55; col. 2, lines 19-43; col. 16, lines 51-65);

deriving a plurality of demodulated data sequences from a data sequence using said plurality of channel estimation values (col. 4, lines 33-44; col. 14, lines 26-32); and selecting one output data sequence by making judgment of reliability of said plurality of demodulated data (judgment of reliability is based on accurate estimation and final determination circuit 11 where data symbol is output to decoder 12) (fig. 15, elements 4, 9, 11; col. 14, lines 26-32, 47-53).

***Allowable Subject Matter***

13. Claims 5, 6, 8, 18-20, 22, 23, 33-37, 47, 49, 53-68, 70-77, 85 allowed.
14. Claims 1, 2, 4 and 8 would be allowable if rewritten or amended to overcome the claim objection(s), set forth in this office action.
15. Claim 69 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, and the claim objection set forth in this Office action.
16. Claim 79 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.



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**Conclusion**


17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qutub Ghulamali whose telephone number is (571) 272-3014. The examiner can normally be reached on Monday-Friday, 7:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

QG.

January 5, 2007.

  
MOHAMMED GHAYOUR  
SUPERVISORY PATENT EXAMINER